

1/31

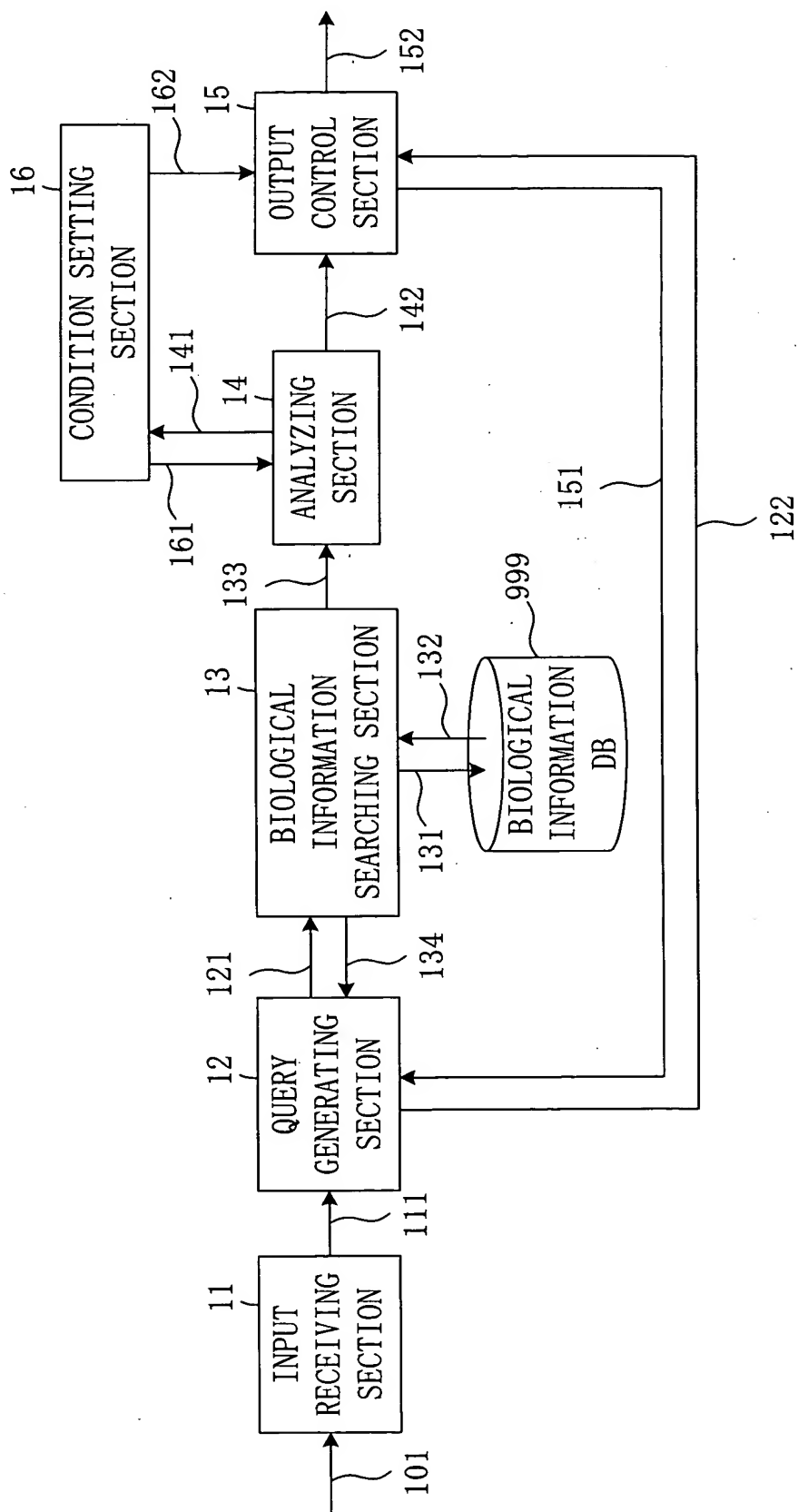


FIG. 1

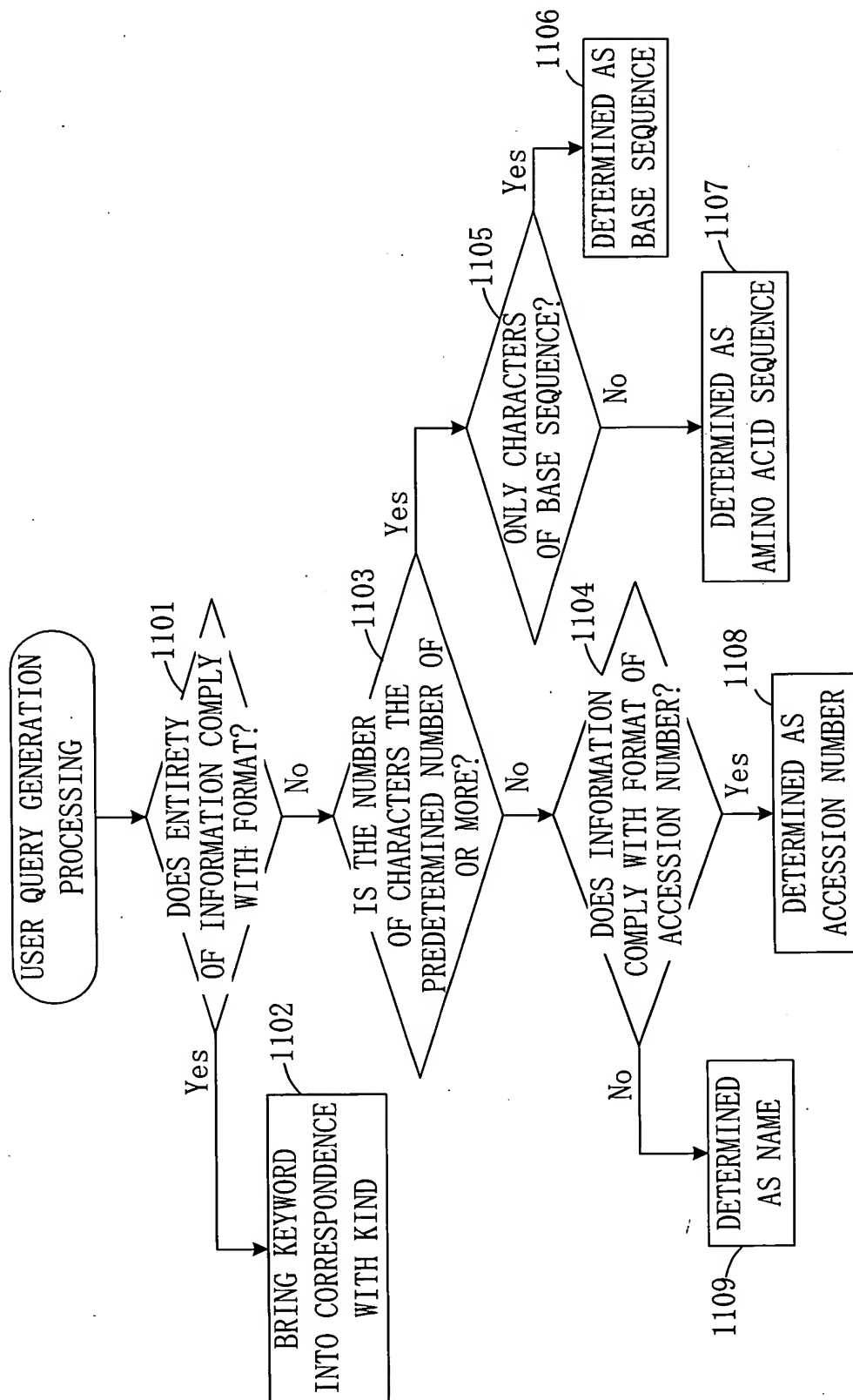


FIG. 2

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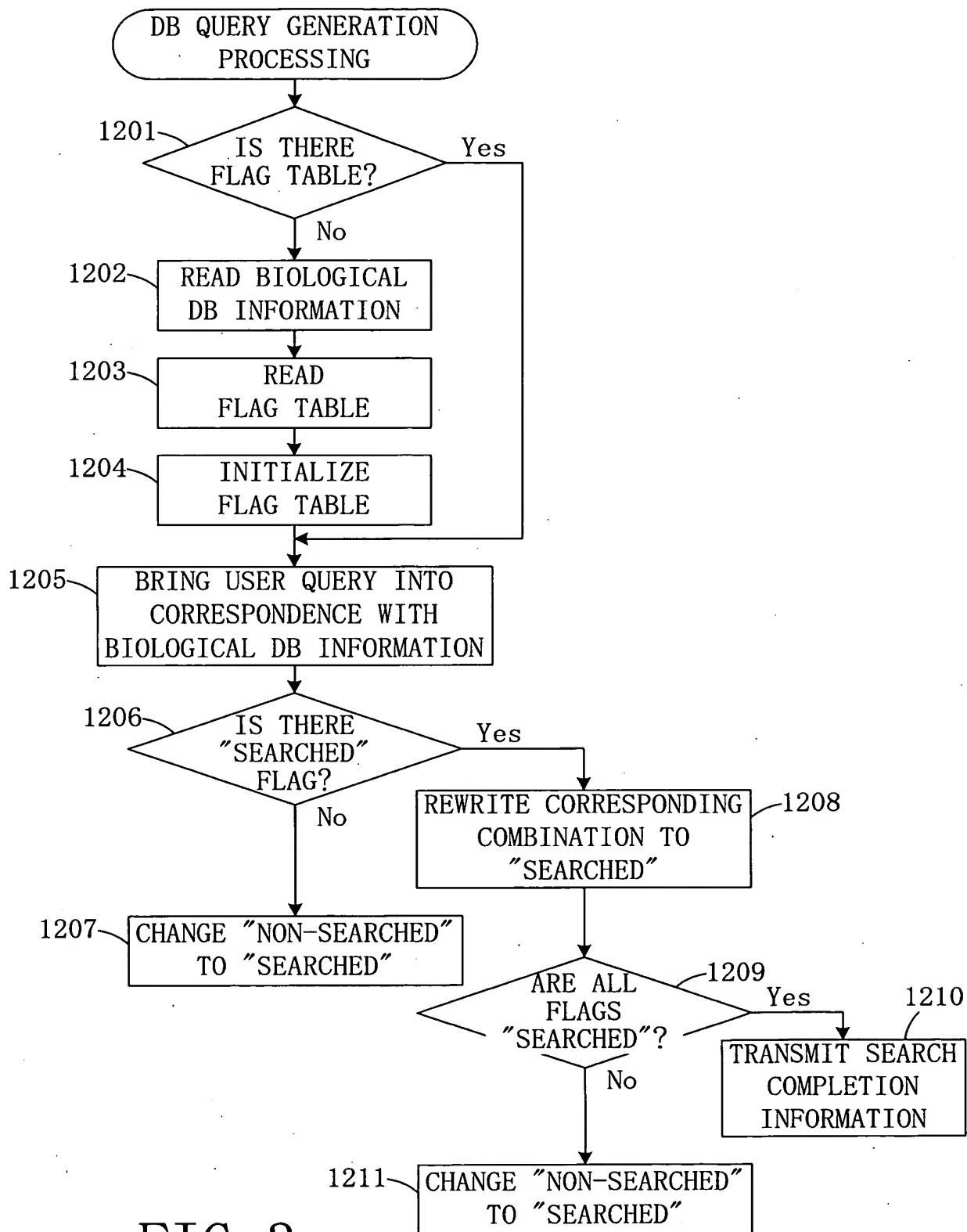


FIG. 3

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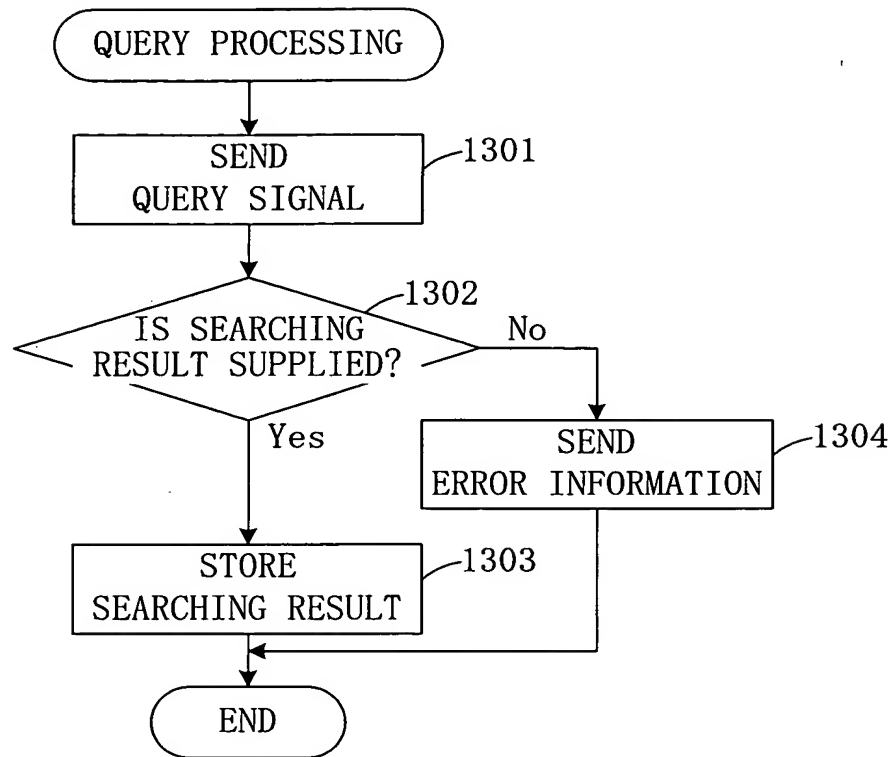


FIG. 4

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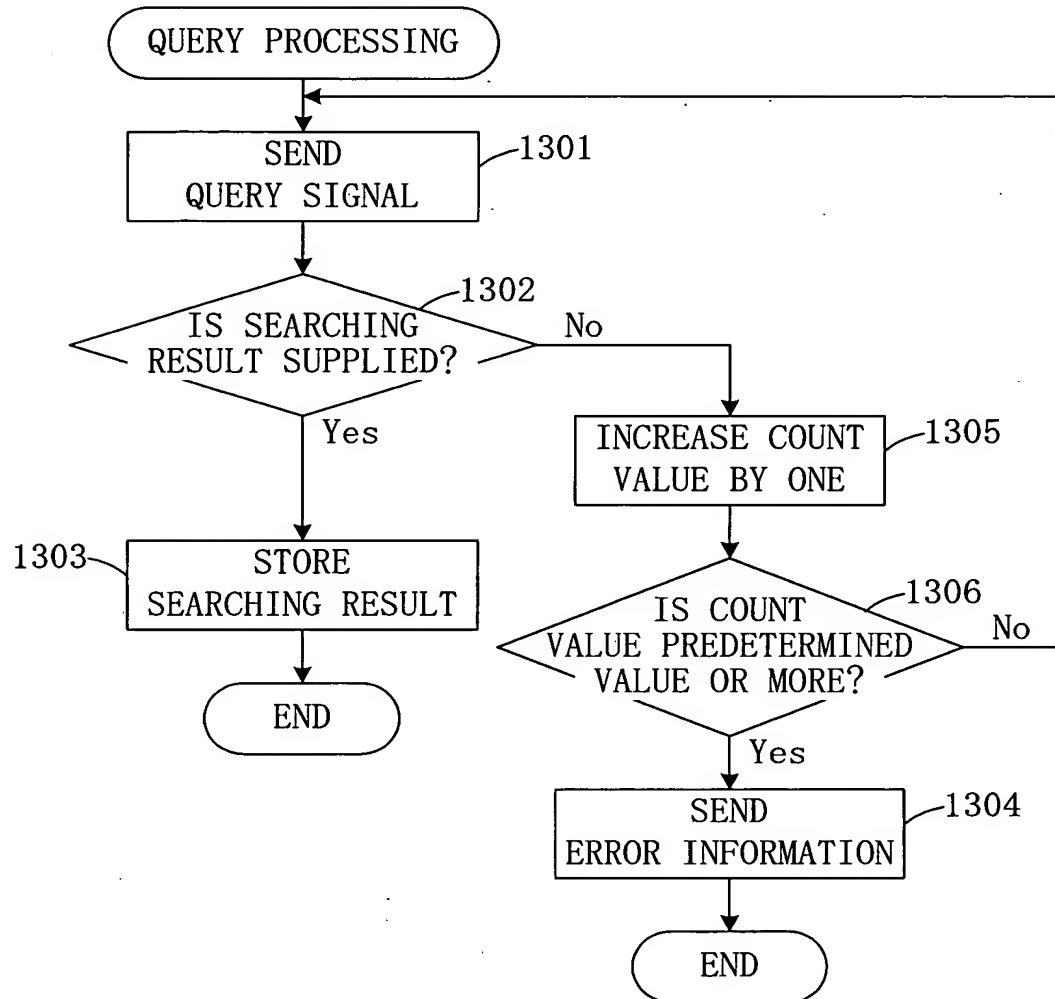


FIG. 5

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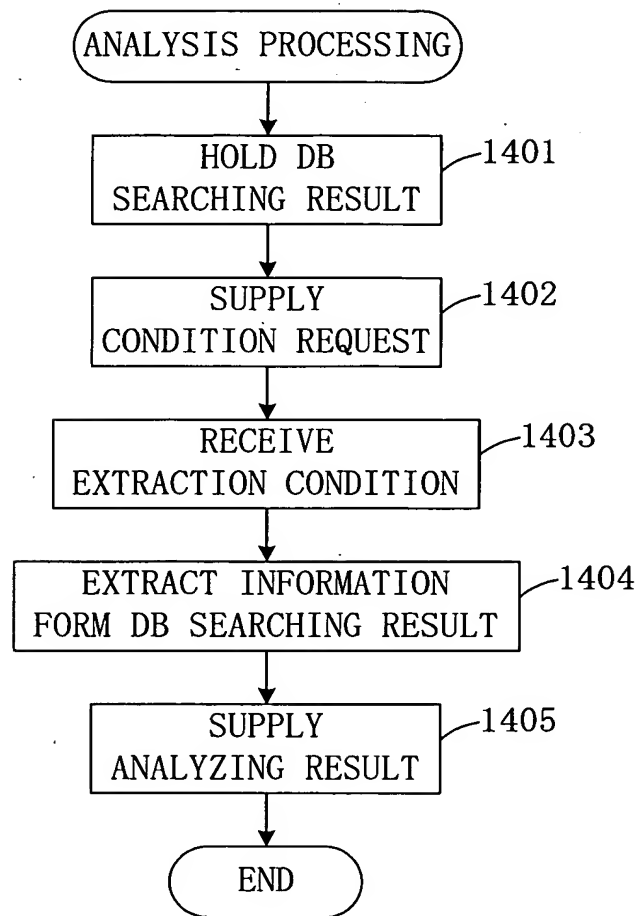


FIG. 6

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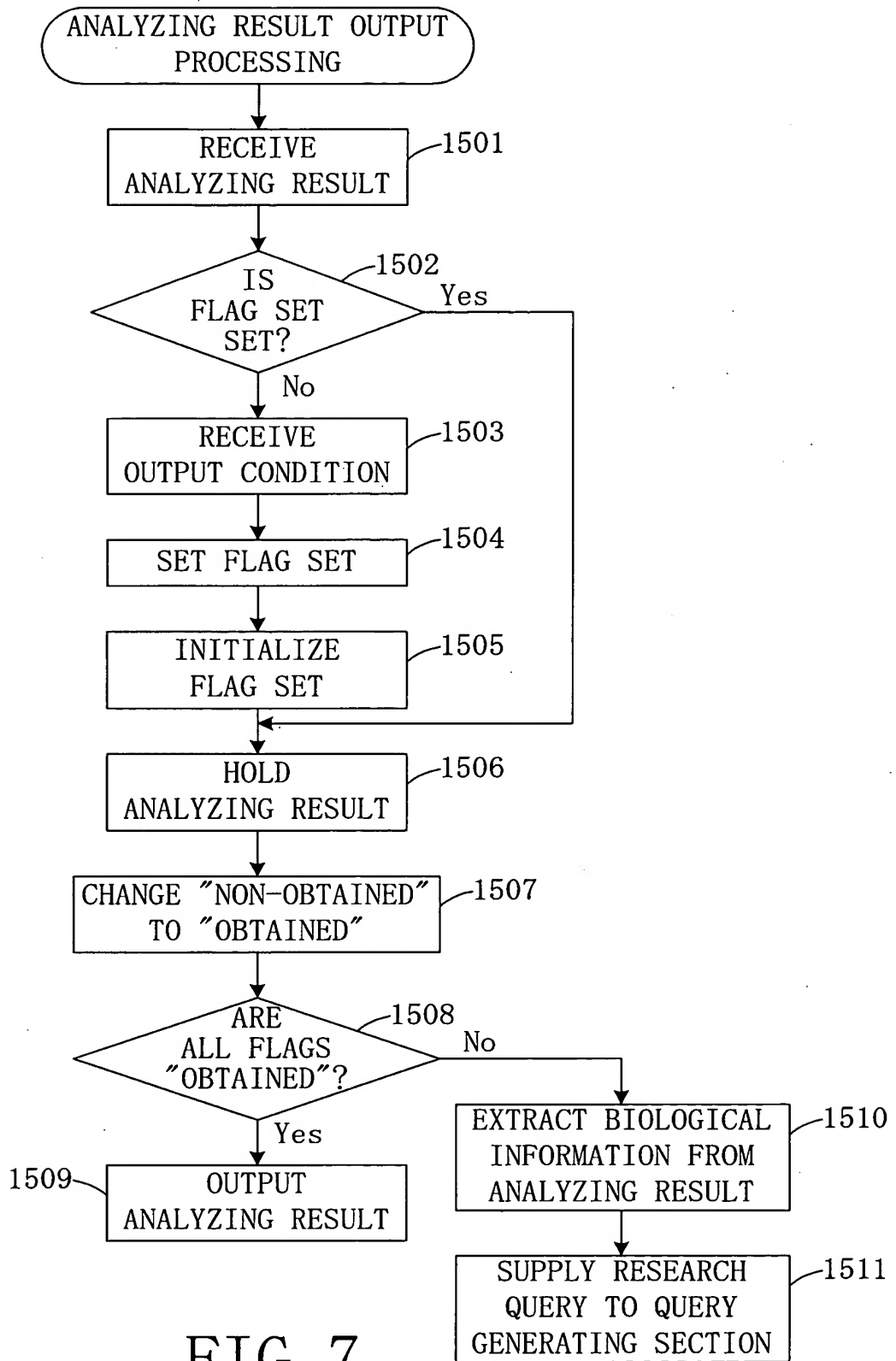


FIG. 7

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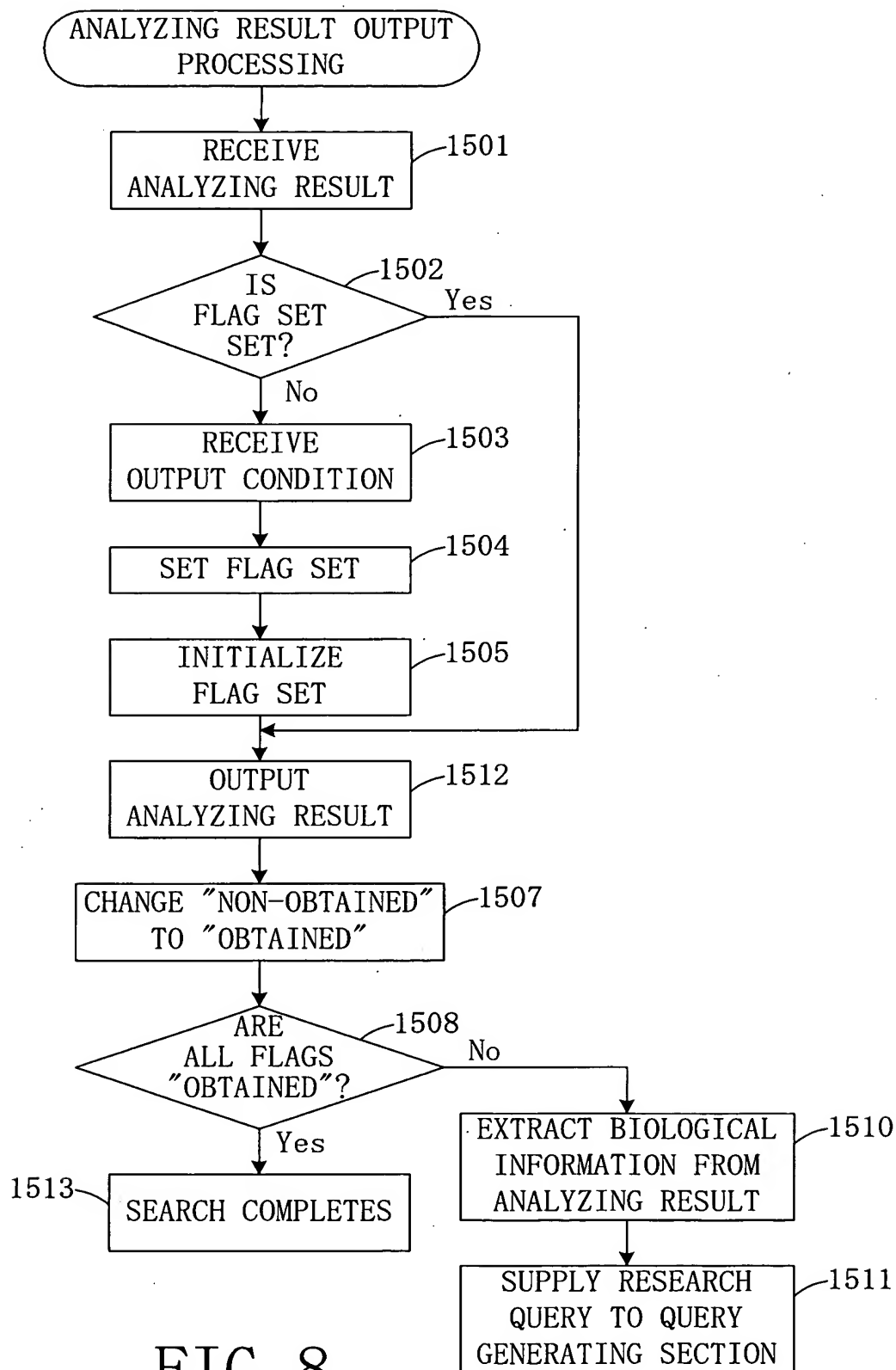


FIG. 8

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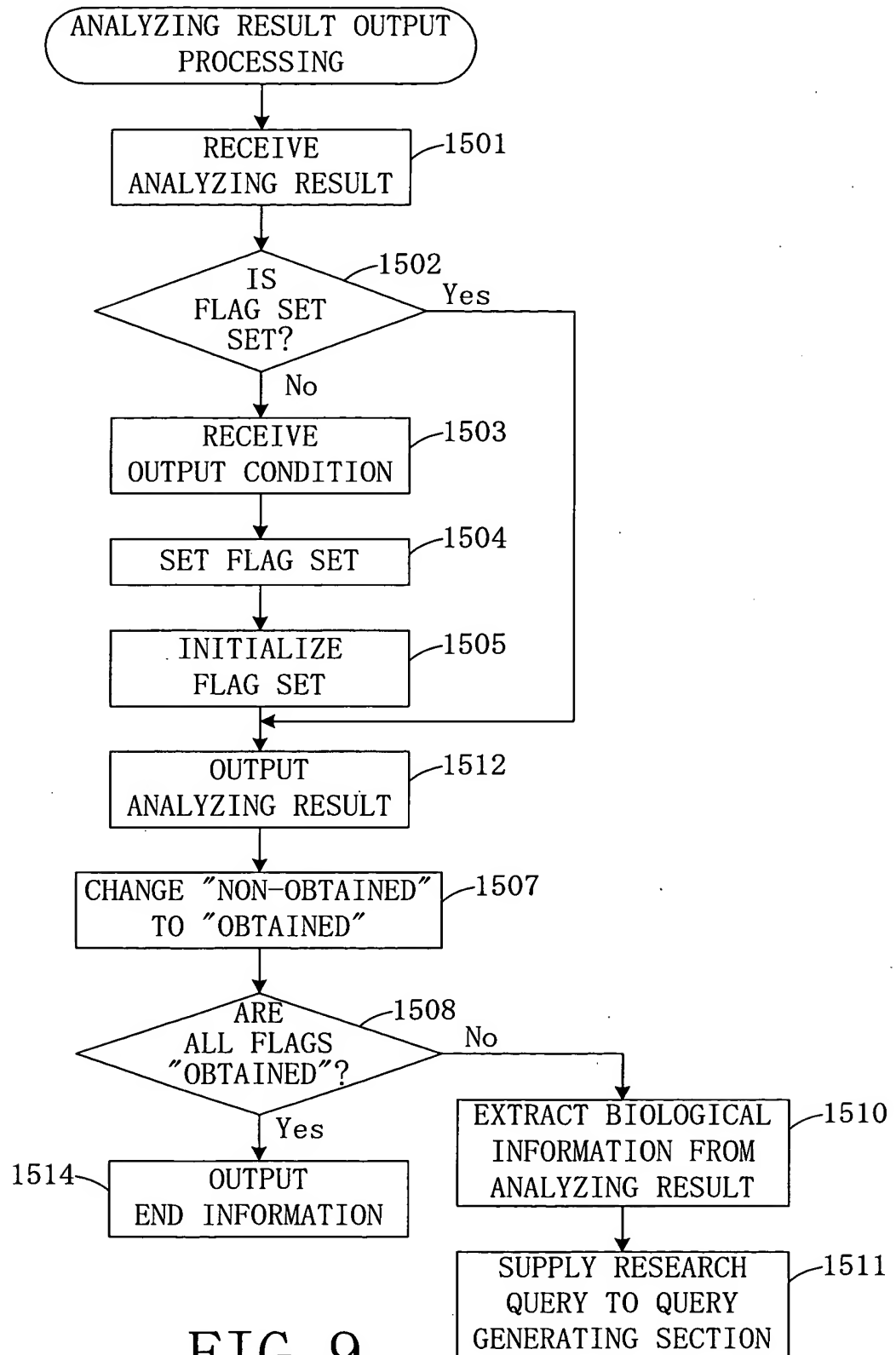


FIG. 9

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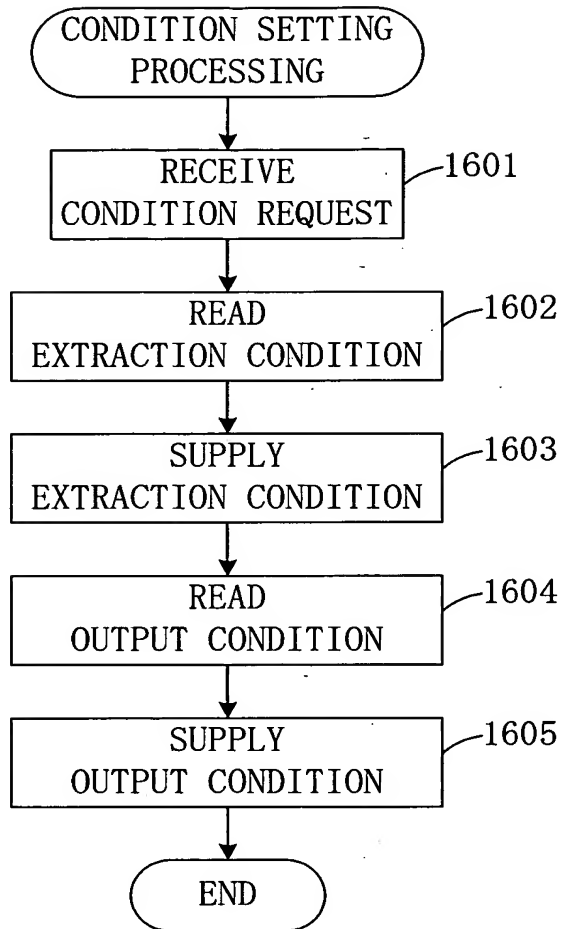


FIG. 10

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Input form

Protein or gene name

Accession No. ☐ protein ☐ gene

Sequence

☐ amino acid ☐ gene

FIG. 11

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EXTRACT AS BYNAME

<input type="checkbox"/> 5172	<i>Hs</i>	SLC26A4; solute carrier family 26, member 4	7q31	■■■■■
	Aliases:	PDS, DFNB4, PENDRIN		
	OMIM:	605648		
	RefSeq[R]:	NM_000441		
	Nucleotide:	AC002467, AF030880		
	Protein:	AAB88773, AAC51873, NP_000432		
<input type="checkbox"/> 23985	<i>Mm</i>	Slc26a4 solute carrier family 26, member 4	12 B1	■ ■■■■
	Aliases:	Pds		
	RefSeq:	NM_011867		
	Nucleotide:	AF167411		
	Protein:	AAD51617, NP_035997		
<input type="checkbox"/> 29400	<i>Rn</i>	Slc26a4 solute carrier family 26, member 4	6q16	■ ■■■■
	Aliases:	Pds		
	RefSeq:	NM_019214		
	Nucleotide:	AF167412		
	Protein:	AAD51618, NP_062087		
<input type="checkbox"/> 65010	<i>Hs</i>	SLC26A6 solute carrier family 26, member 6	3p21.3	■ ■■■■
	Aliases:	DKFZp586E1422		
	RefSeq[R]:	NM_022911, NM_134263, NM_134426		
	Nucleotide:	AB033288, AB102713, AF279265, AF288410, AF416721, AK056237, AL050170, BC017697,		
	Protein:	AAF81911, AAH17697, AAK19153, AAN07094, BAB69041, BAB71126, BAC56861, CAB43306, NP_075062, NP_599025, NP_602298		

FIG. 12

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- | | |
|---------------------------------------|--|
| <input type="checkbox"/> 1: NT_039548 | Mus musculus chromosome 12 genomic contig, strain C57BL/6J
gi 28520880 ref NT_039548.1 Mm12.39588.30[28520880] |
| <input type="checkbox"/> 2: NW_043944 | Rattus norvegicus chromosome 6 WGS supercontig
gi 26007775 ref NW_043944.1 Rn6.1303[26007775] |
| <input type="checkbox"/> 3: NM_134426 | Homo sapiens solute carrier family 26, member 6 (SLC26A6), transcript variant 3, mRNA
gi 20336278 ref NM_134426.1 [20336278] |
| | • |
| | • |
| | • |
| <input type="checkbox"/> 35: AI916698 | tu89g11. x 1 NCLCGAP_Gas4 Homo sapiens cDNA clone IMAGE:2258276 3' similar to TR:O43511 O43511 PENDRIN. ;
MRNA sequence
gi 5636553 gb AI916698.1 [5636553] |
| <input type="checkbox"/> 36: AI747481 | u115h05. x 1 Sugano mouse embryo mewa Mus musculus cDNA clone IMAGE:2076921 3' similar to TR:O43511 O43511
PENDRIN. ; MRNA sequence
gi 5125725 gb AI747481.1 [5125725] |
| <input type="checkbox"/> 37: AF030880 | Homo sapiens pendrin (PDS) mRNA, complete cds
gi 2654004 gb AF030880.1 AF030880.1[2654004] |

ACCESSION NUMBER GI NUMBER

FIG. 13

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LOCUS AF030880 4930 bp mRNA linear PRI 01-DEC-1997
DEFINITION Homo sapiens pendrin (PDS) mRNA, complete cds.
ACCESSION AF030880
VERSION AF030880.1 GI:2654004
KEYWORDS
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 4930)
AUTHORS Ever L.A., Glase, B., Beck, C.J., Idos, J.R., Heym, M.
TITLE Pendred syndrome by mutations in a putative sulfate transporter gene (PDS)
JOURNAL Gene 21 (3), 512-532 (1999)
MEDLINE 9750948
PUBMED 893590
REFERENCE 2 (bases 1 to 4920)
AUTHORS Ever L.A., Glase, B., Beck, C.J., Idos, J.R., Heym, M.
TITLE Direct Submission
JOURNAL Submitted (21-SEP-1998) AA Technology Branch, National Institutes

FEATURES
source

gene
CDS

Location/Qualifiers

1..4930

/organism="Homo sapiens"

/db_xref="taxon:9606"

/chromosome="7"

/map="7q22-q31.1"

1..4930

/gene="PDS"

225..2567

/gene="PDS"

/function="putative sulfate transporter"

/note="mutated in Pendred syndrome"

/codon_start=1

/product="pendrin"

/protein_id="AAL57073.1"

/db_xref="GI:2654005"

/translation="MAAPGGRSEPPQLPEYSCSYMVSRPVYSELAFQQQHERRLQERK
TLRESLAKCCSCRKRAFGVLKTLVPILWLPKYRVKEWLLSDVISGVSTGLVATLQG

EELDIPTKEIEIQVDWNSLPVKVNVKVPVHSLVLDCAISFLDVVGVRSLRVIVKE
FQRIDVNVYFASLQDYVIEKLEQCGFFDDNIRKDTFFLTVHOAILYLNQVKSQEGQG
SILETITLIQDCKDTLELIETELTEEELDVQDEAMRTLAS"

BASE COUNT 1454 A 937 C 1082 G 1457 T

ORIGIN

1 ctcagccttc cgggttcggg aaaggggaag aatgcaggag gggtaggatt tctttcctga
61 taggatcggg tgggaaagac cgcagcctgt gtgtgtcttt cccttcgacc aagggtgtctg
121 ttgctccgta aataaaacgt cccactgcct tctgagagcg ctataaaggc agcggaaggg
.
.
.
4801 tccagtattg tatatgagtt ttaacaaatt aaaaaatcaa atcatgtaca ttgaaaata
4861 tttgcacaca tttaaaaata aatgtaaagt tgtcttttaa actactcgga tgtgtccttt
4921 ctgaacaaaa

EXTRACT AS BYNAME

EXTRACT AS AMINO
ACID SEQUENCE

EXTRACT AS BASE SEQUENCE

FIG. 14

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BLASTP 2.2.3 [Apr-12-2000]

Sequences producing significant alignments:

Score E
(bits) Value

ref|NP_000432.1| pendrin [Homo sapiens] >gi|11421915|ref|XP_0049... 1229 0.0
ref|NP_062087.1| pendrin: Pendred syndrome homolog (human) [Ratt... 1101 0.0
ref|NP_035997.1| pendrin: Pandred's syndrome [mus musculus] > gi| ... 1098 0.0

...

pir|B82127 sulfate permease family protein VC2031 [imported]... 35 2.8
emb|CAB62519.1| (AL050358) hypothetical protein [Homo sapiens] 34 3.6
pir|T16522 hypothetical prtein K02E10.2 - Caenorhabditis alea... 34 4.7

>ref|NP_000432.1| pendrin [Homo sapiens] EXTRACT AS NAME
ref|XP_004953.1| pendrin [Homo sapiens]
sp|O43511|PEND_HUMAN PENDRIN (SODIUM-INDEPENDENT CHLORIDE/100IDE TRANSPORTER)
gb|AA51873.1| (AF030880) pendrin [Homo sapiens]
Length = 780

Score = 1229 bits (3180), Expect = 0.0
Identities = 649/780 (83%), Positives = 649/780 (83%)

Query: 1 MAAPGGRSEPPQLPEYSCSYMVS RPYSELA FQQMERRLQERKTLRESLAKCCSCSRKR 60
MAAPGGRSEPPQLPEYSCSYMVS RPYSELA FQQHERRLQERKTLRESLAKCCSCSRKR
Sbjct: 1 MAAPGGRSEPPQLPEYSCSYMVS RPYSELA FQQHERRLQERKTLRESLAKCCSCSRKR 60

...

Query: 721 TVHDAILYLQNQVKSQEGGGSILETITLIQDCKDXXXXXXXXXXXXXDVQDEAMRTLAS 780
TVHDAILYLQNQVKSQEGGGSILETITLIQDCKD DVQDEAMRTLAS
Sbjct: 721 TVHDAILYLQNQVKSQEGGGSILETITLIQDCKDTLELIE TELTEEELDVQDEAMRTLAS 780

FIG. 15

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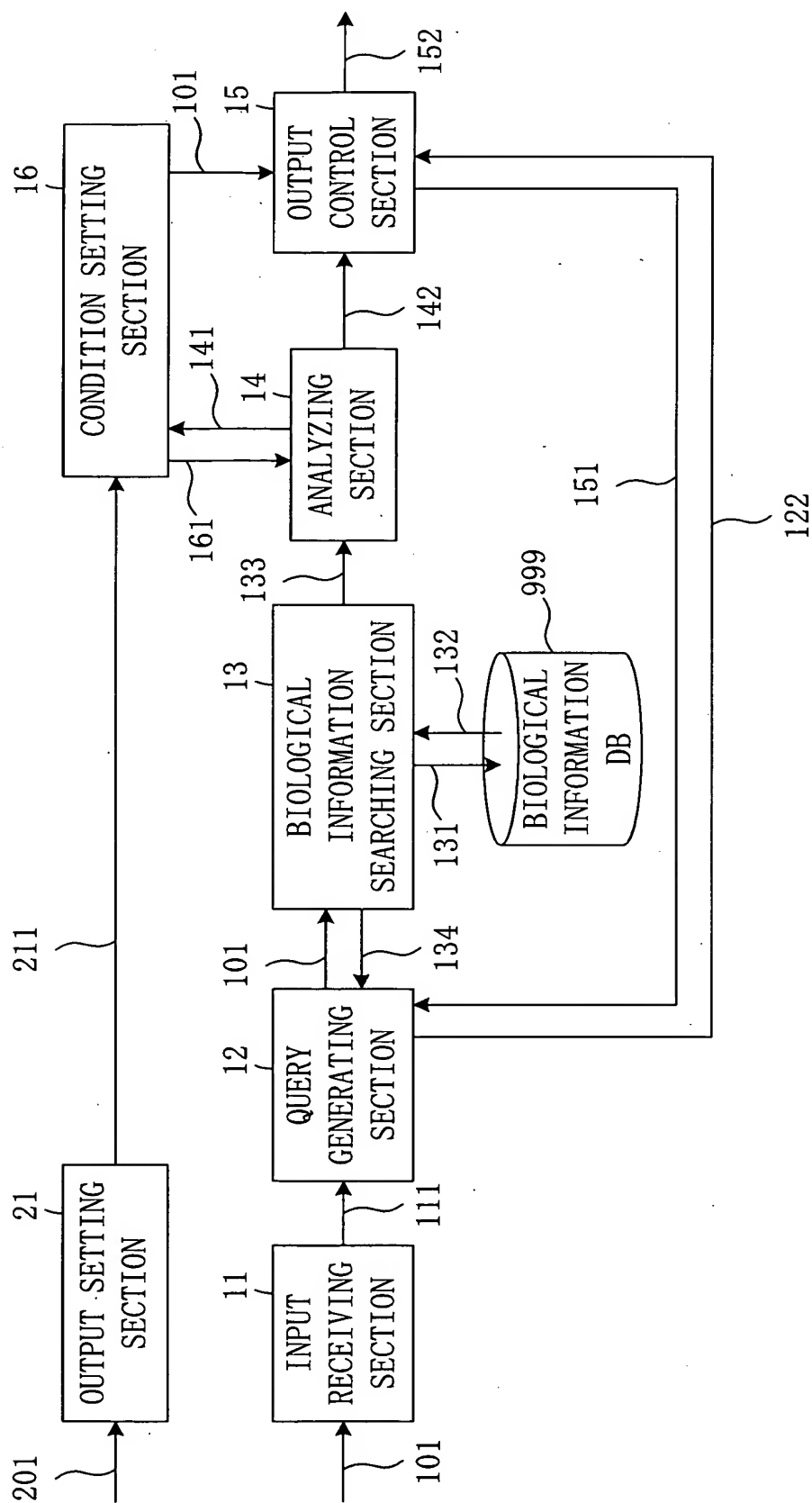


FIG. 16

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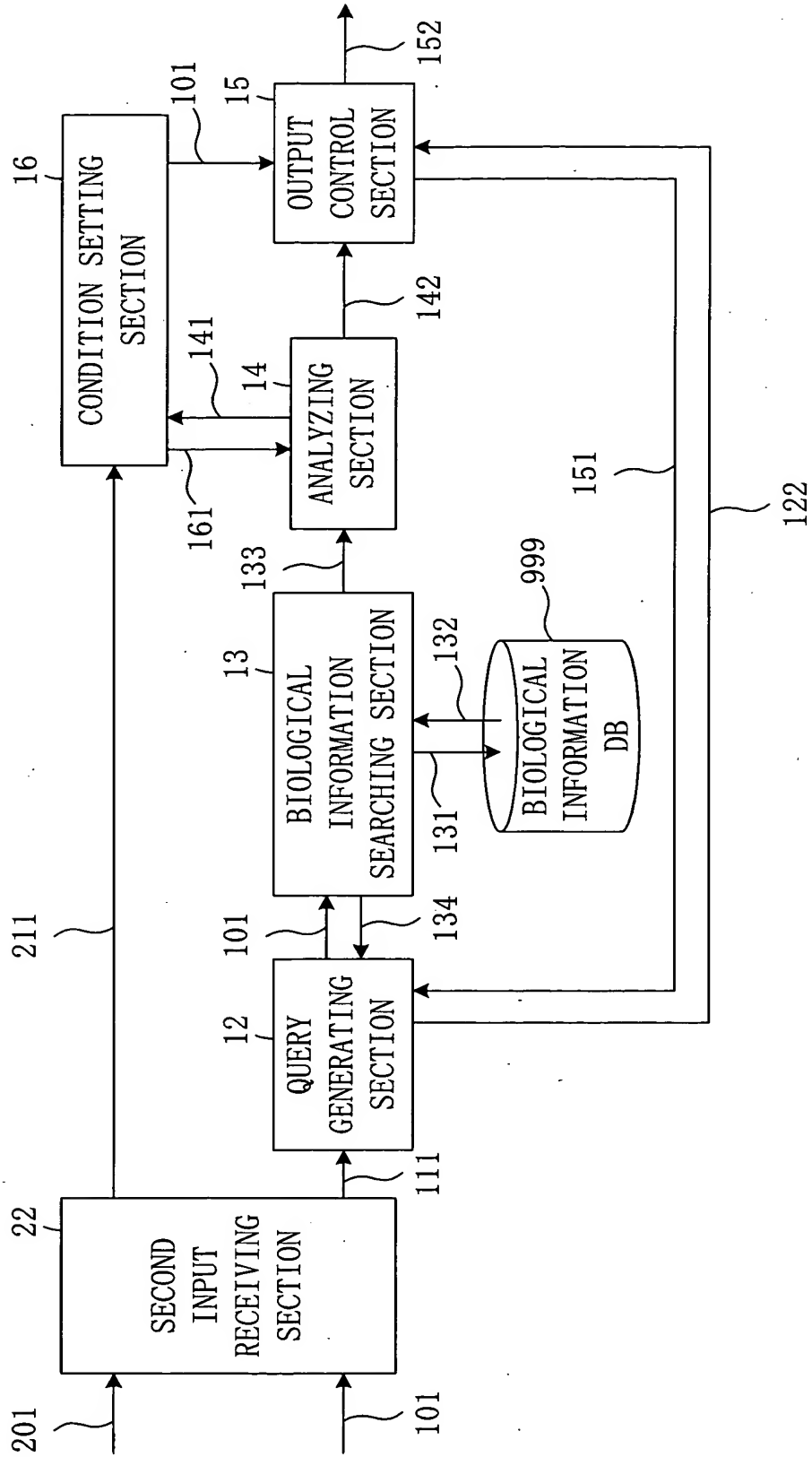


FIG. 17

Entrez ☒ name ☐ Accession No. ☐ Sequence
LocusLink ☒ name ☐ Accession No. (RefSeq) ☐ Accession No. (OMIM) ☐ Accession No. (Entrez) ☐ chromosome position
BLAST ☒ name ☐ Accession No. ☐ Sequence ---- e-value

FIG. 18

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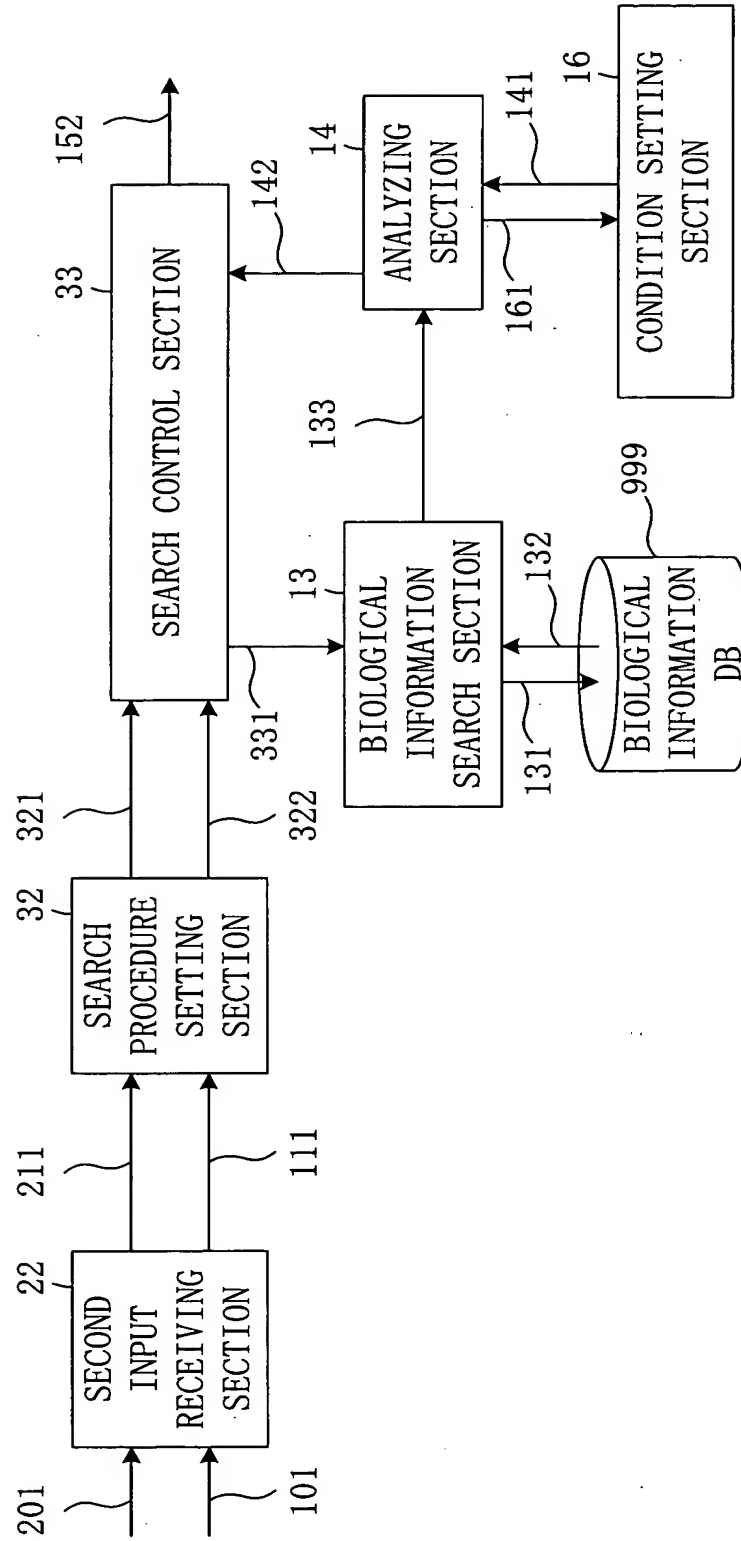


FIG. 19

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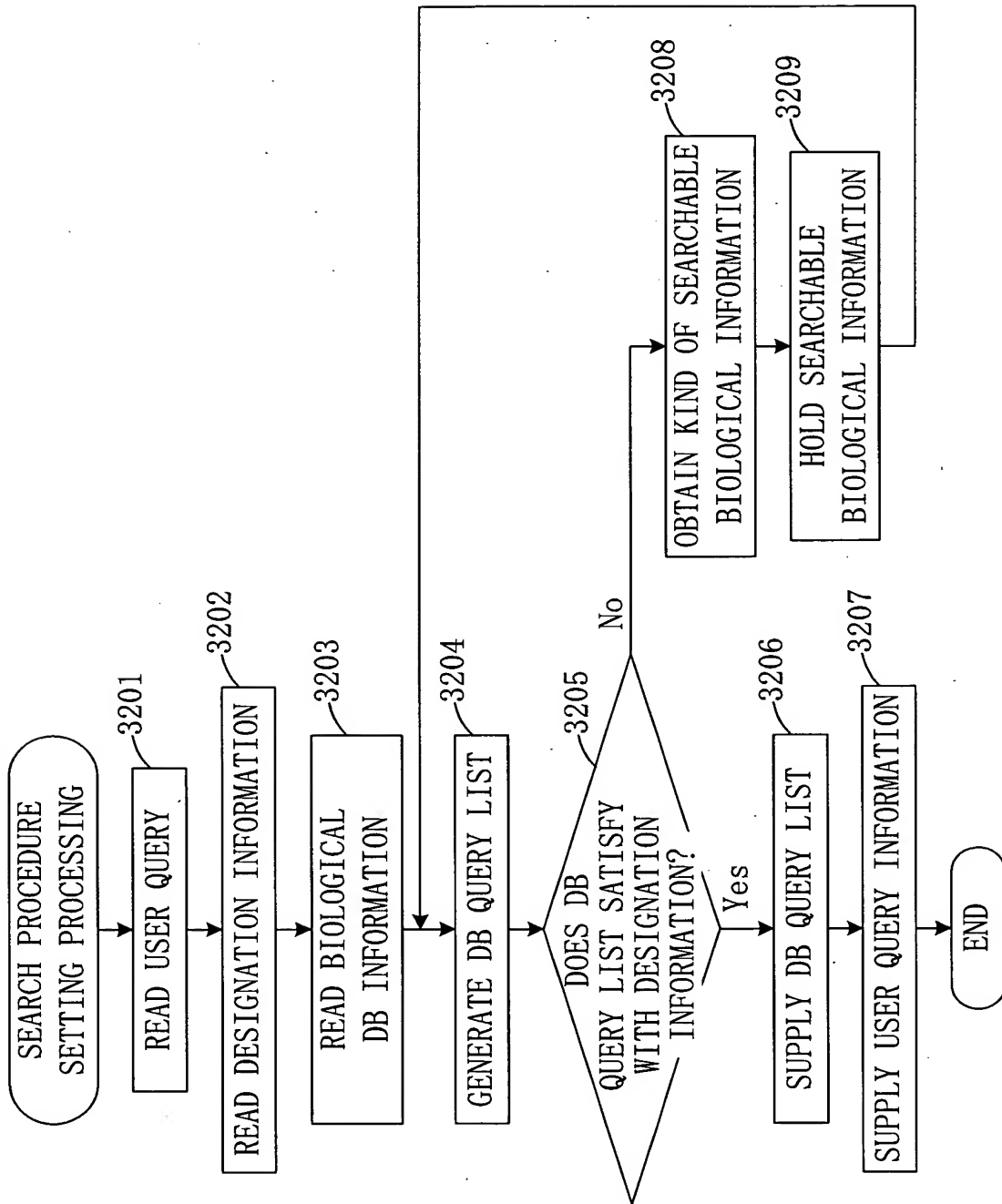


FIG. 20

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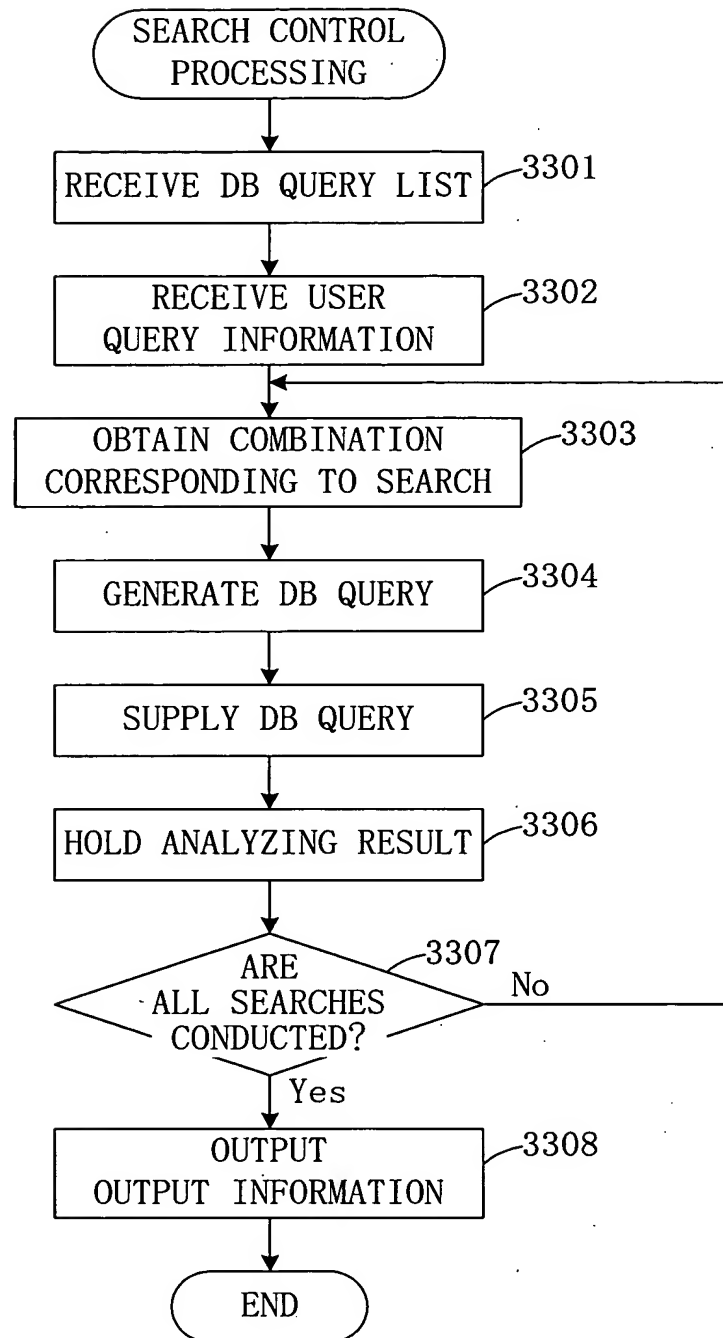


FIG. 21

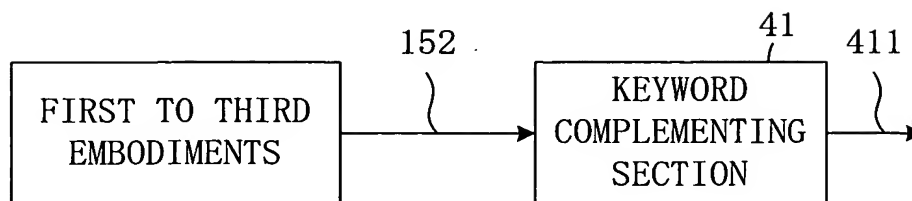


FIG. 22

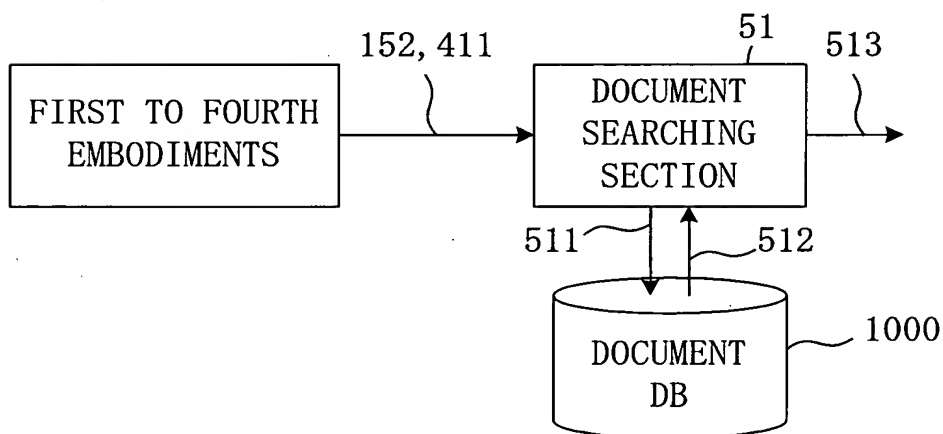


FIG. 23

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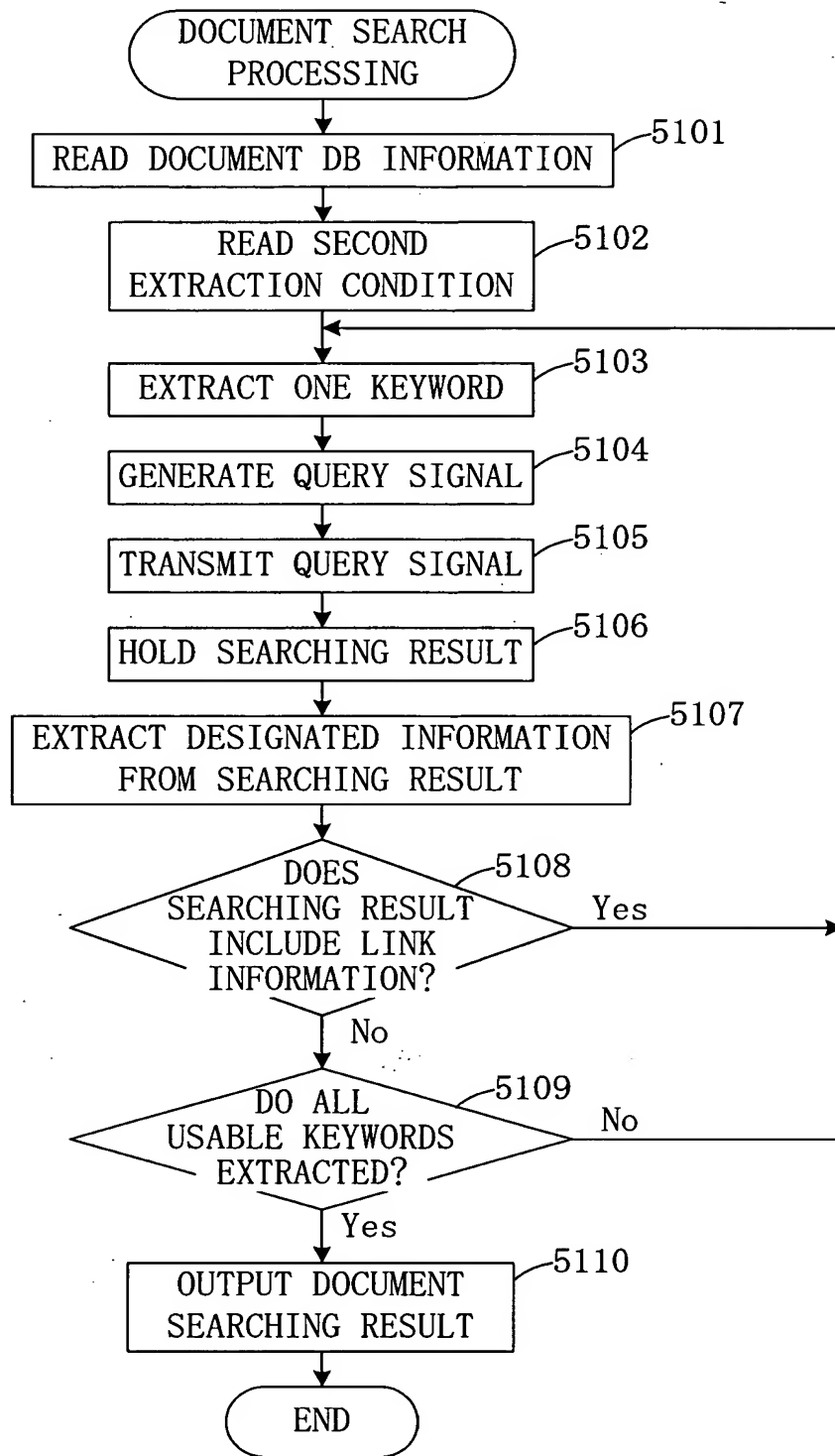


FIG. 24

ICON

AUTHOR

TITLE

JOURNAL NAME,
ISSUED DATE

ID NUMBER

1:

☐

Huland M. Kiern AG, Blom RS, Coal P, Samuel JJ, Johan BR, Steel PK, Enech K

Lack of pendrin expression leads to

Development. 2000 Jun; 1:130 (9): 2013-2020

PMID: 12746323 [PubMed - as supplied by publisher]

2:

☐

Gruete B, Bieber J, Krude S

Neonatal thyroid disorders.

Horm Res. 2002; 63 Suppl 1: 32-8

PMID: 23284723 [PubMed - in process]

3:

☐

Erieche M, Kwan HT, Eroki M, Mad MK, Mielsen A

Regulated expression of pendrin in rat

Physiol. J. 2002 Apr; 283 (4): F384-93.

PMID: 124444739 [PubMed - indexed for MEDLINE]

4:

☐

Konno T, Nakagawa N, Suzuki M, Murakami S, Minami A, Kawai A, Karawa R

Expression of human pendrin in

J Histochem Cytochem. 2000 Jan; 39 (4): 137-42.

PMID: 12487437 [PubMed - indexed for MEDLINE]

5:

☐

Zame G, Bruna L, Knau H, Wang K, Fujii M, Ginzi D, Duh YH, Clark PD

Increasing the effectiveness of radioactive iodine therapy in

Surgery. 2003 Dec; 133 (5): 885-94; discussion 990.

PMID: 12475335 [PubMed - indexed for MEDLINE]

•

•

•

FIG. 25

☐ 1: Development. 2000 Jun. 1;130 (9): 2013-2020

Lack of pendrin expression leads to

Huland M, Kiern AG, Blomq RS, Coal P, Samuel JJ, Johan BR, Steel PK, Enerb K.

Medical Genetics, Department of Biology, Institute of Biochemistry, Gomeorg University, Box 320, SE-240
30 Gomeorg, Sweden. MRC Institute of Research, University Park, York, YK2 4RD, UK. Institute of
Anatomy and Cell Biology. ...

Mice that lack the winged helix/forkhead gene ...

PMID:12746323 [PubMed - as supplied by publisher]

JOURNAL NAME

TITLE

AUTHOR

SUMMARY

FIG. 26

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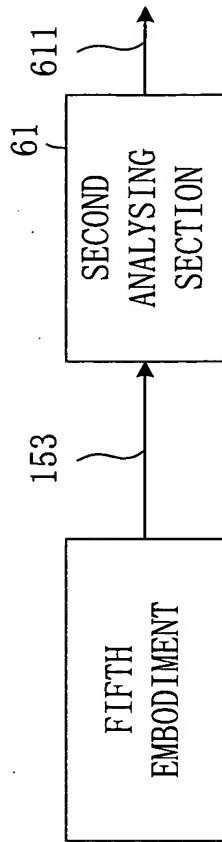


FIG. 27

EXAMPLE OF SCHOLARLY PAPER
OBTAINED BY ONLY SEARCHING
RESULT DUE TO PENDRIN

EXAMPLE OF SCHOLARLY
PAPER OBTAINED BY BOTH
SEARCHING RESULT DUE TO
PENDRIN AND SEARCHING
RESULT DUE TO SLC26A4

<input type="checkbox"/> 1: Huland M, Kiern AG, Blom RS, Coal P, Samuel JJ, Johan BR, Steel PK, Enerb K. Lack of pendrin expression leads to Development. 2000 Jun; 1:130 (9): 2013-2020 PMID: 12746323 [PubMed - as supplied by publisher]	<input type="checkbox"/> 2: Grote B, Bieber J, Krude S. Neonatal thyroid disorders. Horm Res. 2002; 83 Suppl 1: 32-8 PMID: 23284723 [PubMed - in process]	<input type="checkbox"/> 12: Rilleme NS, Hill AJ. Prolactin regulation of the pendrin- iodide transporter in Physiol J. 2003 Feb; 322 (2): E34-8. PMID: 12384373 [PubMed - indexed for MEDLINE]	<input type="checkbox"/> 13: Kamiski JA, Wang G, Everek JL, Green PE, Giebs G, Anon SO. Formate-stimulated NaCl absorption in of the pendrin protein. Physiol J. 2003 Nov; 331 (4): F874-83. PMID: 12348297 [PubMed - indexed for MEDLINE]	<input type="checkbox"/> 14: Rot PP, Hirscheberg M, Maru S, Sasaki K, Roy RI, Green DE, Kon K, Lippin J, Yen MP. Retention of pendrin in Hum Genet. 2002 Jan; 1: 23 (45): 2613-32. PMID: 12357323 [PubMed - indexed for MEDLINE]
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FIG. 28

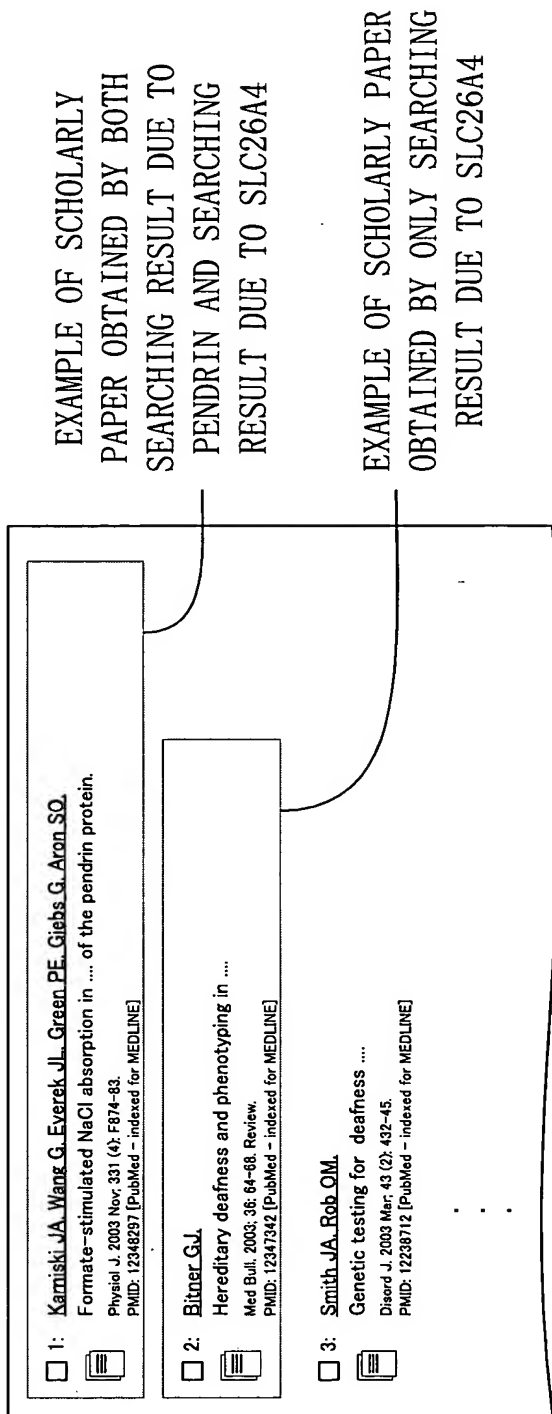


FIG. 29

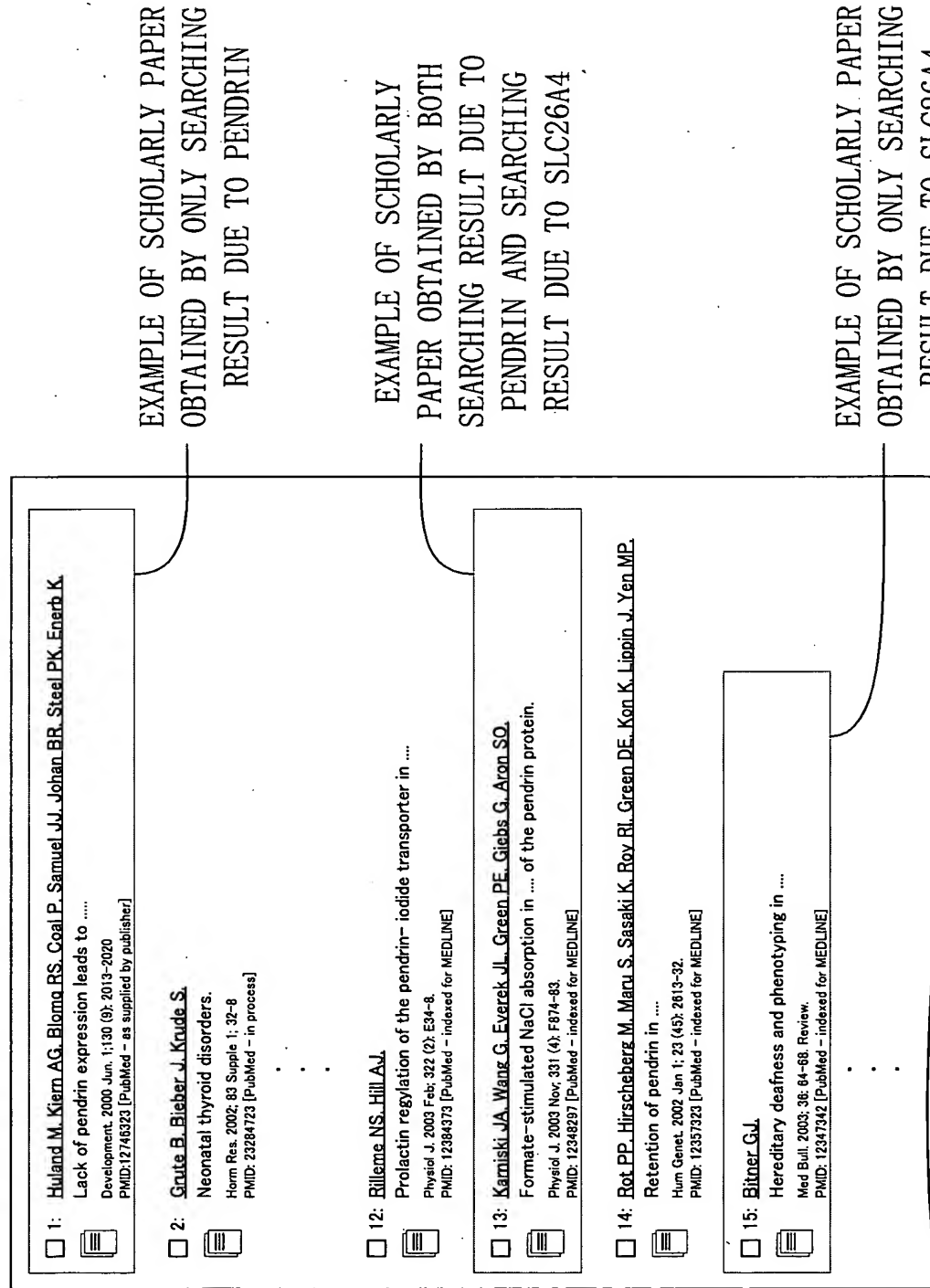


FIG. 30

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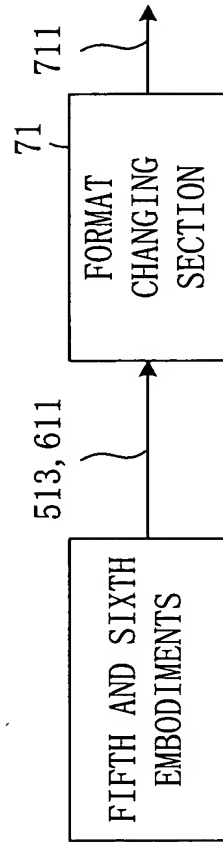


FIG. 31

KEYWORD
pendrin

Another Name
[GenBank]
•PDS
[LocusLink]
•SLC26A4
•solute carrier family
26, member 4
•PDS
•DFNB4
•SLC26A6
•solute carrier family
26, member 6
•DKFZp586B1442
[BLAST]
•down regulated in
adenoma
•down regulated in
adenoma protein
•sulfate anion
transporter 1
•diastrophic
dysplasia
.....

Thyroid 2002 Jan; 12 (9): 849-54

Expression of nicotinamide adenine denucleotide phosphata oxidase

Lacro J, Nocer M, Mirror C, Cello J, Vriene B, Duput C, Filetti M, Bidart GP,
Department of Biochemistry, Institute of Medical Genetics, France.

Duox2, and probably Duox1 are

.... of sodium iodide symporter (NIS), pendrin and

PMID: 11738123 [PubMed - indexed for MEDLINE]

Thyroid 2002 Jan; 12 (9): 849-54

Update on intrathyroidal iodine

Dun A, Samuel EJ.
Department of Medicine, Institute of Biochemistry, USA duna@xxx.edu

The thyroid concentrates iodide from the serum and

DISPLAY SUMMARY
OF DOCUMENT IN
FORM OF LIST

CHANGE DISPLAY
COLOR OF KEYWORD

DISPLAY GENE OR
PROTEIN BYNAME

FIG. 32